地理信息系统软件开发

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课程信息简介

✓ **学分**：2.0

✓ **课时组成**：共36学时，其中 实习 24学时（8次课）；理论 12学时（4次课）

✓ **课程内容**：2个综合实习任务

✓ **考试形式**：随堂闭卷考试

✓ **成绩组成**：实习任务1（20%）+实习任务2（20%）+课堂表现（10%）+考试（50%）

实习任务一

目标：以e00文件格式为载体，解析、构建并可视化基本地理信息数据结构

E00：E00 is the file extension for the Arc/Info export format for groups of vector coverages. The Arc/Info export format is a proprietary GIS（Geographic Information Systems）file format for ESRI software. It is also known as an exchange format because the files are used to transfer a coverage, grid to TIN, and associated Info tables between different machines not connected with any type of file sharing network.

The Arc/Info export format is actually **an uncompressed ASCII text editable file**, which contains **special topology and linked tables with attribute information**. The file consists of several small files called subfiles. These subfiles are of two types – standard subfiles（these are fixed files which do not vary from coverage to coverage, follow a pre-defined data format and are common to all E00 files）, and info files（which vary from coverage to coverage and contain user-defined attributes）. Each of the info files starts with a header that gives the names and describes the attributes of each of the records of the file.

实习任务一作业流程

✓ 以个人为单位，寻找、编辑制作一副coverage文件，要求包含拓扑关系；

✓ 在ArcMap中到处为E00文件；

✓ 参照相关格式说明，从底层设计并编码解析该文件；

✓ 完成可视化及简单路径分析；

开发环境要求：

IDE：QTCreator

语言：C++;

实习任务二

目标：利用主流开源GIS软件包，完成空间数据的解析、可视化及地理分析模型运算

涉及的软件包有：GDAL、GEOS、PRJ4等

实习任务二作业流程

✓ 自选区域并制作要素集数据（shp格式）；

✓ 下载、配置并编译适合自己电脑操作平台的开源软件包；

✓ 解析数据并可视化；

✓ 开发相关地理分析模型（模型后续公布）；

开发环境要求：

IDE：QTCreator

语言：C++;